ABSTRACT

A STUDY OF SCREENING OF ASYMPTOMATIC CORONARY ARTERY DISEASE IN TYPE 2 DIABETES MELLITUS PATIENTS BY TREADMILL TEST AND ITS CORRELATION WITH HIGH SENSITIVITY C-REACTIVE PROTEIN

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BACKGROUND

Coronary artery disease is a relatively common and asymptomatic disease in type 2 diabetic patients. hence the diagnosis of coronary artery disease is difficult in initial phase of disease.

This gained special attention over recent years, Since it has significant morbidity and mortality and coronary artery disease is one among the most common cause of death in diabetic individuals with mortality rate of 60 to 70 %.

CAD in diabetes is basically asymptomatic and silent during initial phase of disease and unmasking the risk of CAD has got paramount importance in modern day world since it prevents death and disability .

The screening of CAD should be done early in course of type 2 diabetic patients, since diabetes itself is CAD equivalent. The patients with age more than 40 years should be subjected to screening tests for early diagnosis and timely intervention.

Diabetes is one of the main risk factors for coronary atherosclerosis since it ***accelerates its progression, causes endothelial dysfunction and increases platelets*** activity.
A marker of systemic inflammation and is emerging as an independent risk factor for cardiovascular disease. High hsCRP levels have been attributed to the increased risk of thrombotic episodes including myocardial infarction.

C-reactive protein (CRP) is a member belonging to pentraxin family of proteins. It is an acute phase reactant and synthesized by the liver. Elevated hsCRP levels have also been linked to an increased risk of future development of diabetes. Furthermore, hsCRP levels are increased in people

with diabetes compared with those non diabetes. So far Studies have conducted on hscrp recommends that (hsCRP) is an significant biomarker for prediction of global cardiovascular risk.

In patients with type 2 diabetes ,underlying coronary artery disease is unmasked by performing TMT and measuring the HSCRP levels.

With this introduction,

AIMS AND OBJECTIVES

To study the prevalence of asymptomatic coronary artery disease in type 2 diabetic mellitus patients by Tread Mill TEST(TMT).

To evaluate the positive correlation between TMT positive patients and raised hsCRP levels in asymptomatic diabetics population.

To improve the long term survival in type2 diabetic patients by early detection of asymptomatic CAD and timely intervention.

METHODS

STUDY POPULATION:

100 asymptomatic type 2 patients attending outpatient department at GRH, Madurai.

INCLUSION CRITERIA :

- All Type 2 Diabetes patients as defined by ADA.
- Age >40 yrs.
- Duration of Diabetes >5yrs.
- Family history of CAD**.**
- Hypertenstion
- Dyslipidemia
- Current Tobacco smoking.
- BMI >23 kg/m2
- **hsCRP levels .**
- **Patients with normal ECG and Echocardiogram**

EXCLUSION CRITERIA:

- Previous history of CAD/undergone coronary intervention.
- Patients with abnormal ECG and Echocardiogram.
- Patient Refusal to give consent.
- Age <40 yrs.
- Recently discovered Diabetes and type 1 diabetes
- Severe valvular heart disease.
- Patients with chronic inflammatory condition

STUDY DESIGN:

Prospective observational study

PERIOD OF STUDY:

6 Months (january 2018 – june 2018)

METHODOLOGY

100 patients with asymptomatic type2 diabetes mellitus patients with normal ECG and ECHOCARDIOGRAPHY are subjected to TMT and levels of Hscrp will be measured and results interpreted.

RESULTS

- In this study total participants 100,in this 72% are males remaining 28% are females. Most of the person fall in 50 to 60 years of age

The preavlance of CAD is increases as age advances and as duration of diabetes increases. In this study 57 patients were 5-10 years of duration of diabetes and 19 patients were >10 years duration of diabetes. number of positivity is high among the group between 5-10 years duration of diabetes.

- **65% of population group is hypertensive and majority of them are male Population..The risk of CAD is 29% among the diabetics with hypertension which is Statistically significant with p value of <0.001.**

- The major population of smoking among study is males and the prevalence of coronary artery disease among smokers is 65%.

- **The levels of hscrp is with value of >3 mg/l increased in patients with all cases of TMT positivity with mean value of 4.71mg/l and with standard deviation of 1.21 which is statistically significant with p value of < 0.001.**
- **The levels of Hscrp in patients with TMT negativity is < 3mg/l with mean value of 1.76mg/l which is mild to moderate elevation.** 2.20, with significant P value of <0.001.

CONCLUSION

Early detection of asymptomatic coronary artery disease in type 2 diabetes mellitus has got paramount importance since CAD responsible for high mortality and morbidity.

TREAD MILL TESTING can be used as significant tool for detection of underlying CAD and it is supported by levels of HIGH SENSITIVITY C REACTIVE PROTEIN as surrogative marker .

The early introduction of medical intervention will reduce the disease related morbidity and mortality significantly.

KEY WORDS

TMT - TREAD MILL TEST

CAD - CORONARY ARTERY DISEASE

HSCRP - HIGH SENSITIVITY C-REACTIVE PROTEIN

ECG -ELECTROCARDIOGRAM